

REMARKS

Claims 8 to 21 are pending in this application, with claims 1 to 7 having been withdrawn from further consideration pursuant to a telephone restriction requirement. Claims 8 and 19 are independent. Favorable reconsideration and further examination are respectfully requested.

Claims 8 to 21 were rejected under 35 U.S.C. §102(b) and §103 over U.S. Patent No. 5,545,574 (Chen); and claims 12, 13 and 19 to 21 were rejected under §103 over Chen in view of U.S. Patent No. 5,185,286 (Eguchi). As shown above, Applicants have amended the claims to define the invention with greater clarity. In view of these amendments, reconsideration and withdrawal of the art rejections are respectfully requested.

Both independent claim 8 and independent claim 19 have been amended to specify that the gate dielectric of the gate dielectric layer is comprised of a material having a dielectric constant that is greater than about 10. As explained on page 5 of the application, a high dielectric constant allows thicker gate dielectric thickness, thereby reducing gate leakage current.

The applied art is not understood to disclose or to suggest this feature of the independent claims. More specifically, Chen discloses a gate dielectric layer 24 (Figs. 2 to 9) that includes "silicon dioxide, silicon nitride, or nitrided oxide". As confirmed by the inventor of the subject application, these materials have dielectric constants that are less than 10. Eguchi, which was cited solely for its disclosure of first, second and third openings in a dielectric layer, is not understood to remedy this deficiency of Chen. Accordingly, claims 8 and 19 are believed to be patentable over the art.

Applicant : Been-Yih Jin et al.
Serial No. : 10/081,992
Filed : February 21, 2002
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Attorney's Docket No.: 10559-587001 / P12768


In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance. Such action is requested at the Examiner's earliest convenience.

No fees are believed to be due for this Amendment; however, if any fees are due, please apply them to Deposit Account No. 06-1050 referencing 10559-587001.

The undersigned can be reached at the address shown below. All correspondence should continue to be directed to Scott Harris in our San Diego office. Telephone calls regarding this application should be directed to the undersigned at 617-521-7896.

Respectfully submitted,

Date: February 21, 2003



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

--8. (Amended) A transistor comprising:

a semiconductor substrate, the substrate being substantially free of silicon; and

a gate dielectric layer formed over a portion of the substrate, wherein the gate dielectric comprises a material having a dielectric constant greater than about 10.

16. (Amended) The transistor of claim 8, wherein the substrate has a bandgap narrower than a bandgap of silicon [the gate dielectric comprises a material having a high dielectric constant, the high dielectric constant being greater than the dielectric constant of silicon dioxide].

19. (Amended) A device comprising:

a semiconductor substrate, the substrate being substantially free of silicon;

a well formed in a portion of the substrate, the well having a first type of dopant;

a gate dielectric layer formed over a portion of the well, wherein the gate dielectric comprises a material having a dielectric constant greater than about 10;

a gate electrode defined over a portion of the gate dielectric layer; and

a source region and a drain region defined proximate the gate electrode in the well, the source and drain regions being defined by a second type of dopant.--